

Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1(currently amended):

1. A method for preventing edge peeling defect, comprising:
forming a thin film on a wafer;
forming a ~~patterned metal structure~~ interconnect layer on said wafer;
planarizing the surface of said wafer to remove redundant metal ~~structure~~
of said metal interconnect layer, wherein an exposed part of said thin film
at an edge of said wafer is exposed after planarizing; and
removing said exposed part of said thin film at said edge of said wafer.

Claim 2(previously presented):

The method according to claim 1, wherein said thin film comprises a barrier layer for preventing metal diffusion.

Claim 3(original):

The method according to claim 1, wherein the material of said barrier layer is chosen from the group comprising the following: Ta, TaN, TiN and TiW.

Claim 4(original):

The method according to claim 1, wherein said thin film is formed by physical vapor deposition.

Claim 5(canceled)

Claim 6(currently amended):

The method according to claim 5, wherein said metal ~~structure~~ interconnect layer is chosen from the group comprising the following: copper and aluminum.

Claim 7(previously presented):

The method according to claim 1, wherein the step for removing said exposed part of said thin film comprises etching and chemical mechanical polishing.

Claim 8(currently amended):

The method according to claim 1, wherein said step for removing said exposed part of said thin film exposed comprises removing the residual of said metal ~~structure~~ interconnect layer by planarizing.

Claim 9(previously presented):

The method according to claim 1, wherein said step for removing said exposed part of said thin film is at the edge bevel of said wafer.

Claim 10(previously presented):

The method according to claim 1, wherein said step for removing said exposed part of said thin film is at the backside of said wafer.

Claim 11(previously presented):

The method according to claim 1, wherein said step for removing said exposed part of said thin film employs an edge bevel removal technology.

Claim 12(previously presented):

The method according to claim 11, wherein said step for removing said exposed part of said thin film employs an acid solution.

Claim 13(previously presented):

The method according to claim 11, wherein said step for removing said exposed part of said thin film employs an edge polishing technology.

Claim 14(previously presented):

The method according to claim 13, wherein said step for removing said exposed part of said thin film employs a base slurry.

Claim 15(previously presented):

The method according to claim 13, wherein said step for removing said exposed part of said thin film comprises a treatment of wafer drying.

Claim 16(previously presented):

A method for preventing edge peeling defect, comprising:

forming a barrier layer on a wafer;

forming a metal interconnect layer onto said barrier layer, wherein said barrier layer at said wafer edge is not covered by said metal interconnect layer; and

removing said barrier layer not covered by said metal interconnect layer; annealing said wafer; and

planarizing the metal interconnect layer and removing the redundant metal on the wafer.

Claim 17(original):

The method according to claim 16, wherein the material of said barrier layer is Ta.

Claim 18(original):

The method according to claim 16, wherein the material of said barrier layer is TaN.

Claim 19(original):

The method according to claim 16, wherein said metal interconnect layer is a copper interconnect layer.

Claim 20(previously presented):

The method according to claim 16, wherein said metal interconnect comprises said thin film exposed at the wafer backside.

Claim 21 (previously presented):

The method according to claim 16, wherein said step for removing said barrier layer not covered by said metal interconnect layer comprises removing said thin film exposed at the wafer backside.

Claim 22(previously presented):

The method according to claim 16, wherein said step for removing said barrier layer not covered by said metal interconnect layer comprises removing an incompletely patterned part of said metal interconnect layer on said barrier layer.

Claim 23(original):

The method according to claim 16, wherein said step for removing said barrier layer not covered by said metal interconnect layer comprises an edge bevel removal treatment.

Claim 24(original):

The method according to claim 23, wherein said step for removing said barrier layer not covered by said metal interconnect layer employs an acid solution.

Claim 25(original):

The method according to claim 23, wherein said step for removing said barrier layer not covered by said metal interconnect layer employs an acid

solution comprising nitric acid and hydrofluoric acid.

Claim 26(original):

The method according to claim 9, wherein said step for removing said barrier layer not covered by said metal interconnect layer comprises an edge polishing treatment.

Claim 27(original):

The method according to claim 13, wherein said step for removing said barrier layer not covered by said metal interconnect layer employs a base slurry.

Claim 28(original):

The method according to claim 25, wherein the pH of said base slurry is pH 7~12.

Claim 29(original):

The method according to claim 27, wherein said step for planarizing the metal interconnect layer and removing the redundant metal on the wafer comprises etching for planarizing and chemical mechanical polishing.